**The Impact of a Microfinance Program on
Client Perceptions of the Quality of Care Provided
by Private Sector Midwives in Uganda**

Sohail Agha
Asma Balal
Francis Ogojo-Okello

Sohail Agha is Research Associate Professor, Tulane University, School of Public Health
and Tropical Medicine. Asma Balal is Senior Consultant Deloitte Touche Tohmatsu.
Francis Ogojo-Okello is Senior Research Analyst Abt Associates.

Acknowledgements

Abstract

Objective: To assess the impact of a microfinance program that provided business skills training and revolving loans to private sector midwives on perceived quality of services and client loyalty.

Study Design: A quasi-experimental study with a pre-test post-test design was used to evaluate the impact of the intervention. Exit interviews were conducted at 15 clinics that received the intervention and 7 clinics that did not. Baseline exit interviews were conducted between November and December 2000. Five-days of business skills training were provided to midwives and loans (averaging $454) were given during January and February 2001. A follow-up clinic visit was made to assess whether midwives were implementing what was emphasized during the training. The loans were to be repaid with interest within 6-12 months, at an interest rate that is standard within the local commercial market. For those who repaid the first set of loans (11 clinics), a second set of loans (averaging $742) were provided after June 2001. Follow-up exit interviews were conducted at the same clinics between February and March 2002. We assessed the effect of the intervention at both clinic and client levels. T-tests, the analysis of variance and multivariate logistic regression analysis were conducted.

Principal Findings: These findings should be interpreted cautiously since secular trends were observed during the study period. The intervention was associated with improvement in clients' perceptions of the quality of care received at intervention clinics. The intervention was also associated with a higher level of client loyalty.

Conclusions: The enthusiastic response of midwives and the high loan repayment rate indicate that midwives were very receptive to the microfinance program. Overall, these findings suggest that microfinance may have an important role in strengthening private sector health services by increasing private providers' business skills and clients' satisfaction with services.

INTRODUCTION

In recent years, there has been considerable interest in understanding and augmenting the role of the private sector in the provision of reproductive health services in developing countries. Although there are some concerns, due the absence of regulatory mechanisms, about the quality of services that are provided by the private sector in developing countries (Brugha and Zwi, 1998), health sector reform, the recognition of the potential for greater efficiencies in resource allocation through market segmentation (Sine, 2002; Foreit, 2002), contraceptive security concerns and the potential for rapidly scaling up the provision of reproductive health services drive an interest in the private sector.

Efforts to increase the quality and viability of the private sector supply of health services in developing countries have included franchising and accreditation schemes (Mills et al., 2002). Microfinance is a mechanism with the potential to increase the quality and viability of services offered by small-scale private providers such as midwives. Microfinance may also be used within a social franchise framework, to help establish relationships between a franchisor and a franchisee.

Although they run their practices as businesses, many small-scale providers lack access to capital investment that could be used to improve the quality or increase the range of services that they offer. Moreover, they lack the business skills needed to make their practices more viable. Training providers and enabling them to make financial investments in their health practices may help them to increase the quality and the viability of their services.

This study assesses the impact of a microfinance program on client perceptions of the quality of care offered at private midwife clinics. The main objective of the loan program was to improve the viability of midwife practices by increasing client flows (through greater client loyalty and the establishment of the clinic reputation for quality services), by increasing sources of revenue (from an increased range of services and the consistent availability of drugs) and by a higher level of provider savings. Improving the technical

quality of service provision was not an explicit objective of the intervention. Improvements in the perceived quality of care may be expected to lead to increased client flows by leading to greater retention of current clients and/or by attracting new clients.

BACKGROUND

Between the 1950s and 1970s, microfinance programs supported by governments and donors primarily focused on providing subsidized agricultural credit to small and marginal farmers to improve farm productivity. During the 1980s, microcredit was targeted at poor women to enable them to invest in small-scale businesses and generate income for their households. The emergence of microfinance institutions (MFIs) spurred growth and diversity in microfinance projects in developing countries. Donor efforts to increase resources for microfinance were accelerated in 1995 after the establishment of the Consultative Group to Assist the Poorest (World Bank, 1999). The rationale for microfinance is to facilitate the availability of credit for lower income individuals who are unable to get credit through mainstream banks. Lower income entrepreneurs are not typically served by commercial financial institutions due to a variety of reasons such as the high cost of small transactions, the lack of traditional collateral and geographic isolation. Microfinance facilitates access to credit for the poor by allowing small loans (sometimes less than US$50), and relaxing collateral requirements by accepting 'social collateral' through group-lending schemes where members of the group co-guarantee each other's loans. This method became well known after the Grameen Bank experience in Bangladesh (Adams and Fitchett, 1992).

Microfinance schemes have the primary objective of alleviating poverty, though the functional areas of emphasis may vary from one program to the other. Some of the intermediate objectives typically include empowerment of women, increases in assets and children's schooling (www.cgap.org/history). There is little documentation of microfinance programs designed for small-scale private health care providers. In many countries, small-scale health providers are considered "unbankable" and cannot access credit through local commercial banks because they do not have adequate collateral and because small loans are too costly for a bank to process.

4

There appears to be only one documented instance of the use of microcredit to strengthen the delivery of reproductive health services. In Indonesia, a revolving loan fund was used to help train midwives to establish or expand private practices delivering family planning and reproductive health services. Although no formal impact evaluation was conducted, midwives reported an average of 207 new family planning clients within a year of receiving loans (Summa Foundation, n.d.).

No published study has assessed the impact of a microfinance program on the perceived quality of services available at health facilities in developing countries. Evidence does indicate, however, that microfinance programs can lead to improvements in the quality of life: studies show the positive impact of microfinance programs on consumption, asset accumulation, in reducing domestic violence and on an overall improvement in living conditions (MkNelly et al., 1993; Hule and Mosley, 1996; Montgomery et al., 1996; Schuler et al., 1996).

The Intervention

In recent years, the government of Uganda has recognized that private health providers (consisting of licensed midwives, pharmacists, nurses and doctors) can play an important role in the provision of reproductive health services. However, the financial investment needed to improve the quality and expand the range of services offered by the private sector is not available. One assessment identified the lack of credit as a major constraint to the development of small private health practices in Uganda (SEATS, 2000).

This project was designed to increase the financial viability of small private practices in Uganda, by providing 280 private providers with business skills training and small loans (of $30 to $5,000) to increase the viability and quality of their practices. The Summa Foundation[1] designed the Uganda Private Providers Loan Fund. The loan fund was administered by Uganda Micro-finance Union. The loans were of 6-12 months duration

---

[1] A not-for-profit investment fund that operates under the USAID funded Commercial Market Strategies Project

and were given on the principle of group lending. Institutions such as the Grameen Bank have used similar mechanisms.

In this study, we assess the impact of the intervention on the first set of borrowers of these loans, 15 midwives from the Uganda Private Midwives Association (UPMA). There are two levels of midwifery training in Uganda: enrolled midwife complete their Ordinary level (O-level, grade 11) and receive about two years of professional training; registered midwives receive three years of professional training after completing their Advanced level (A-level, 13 years). Registered midwives' training entails more clinical practicum for obstetrical procedures compared to the training of enrolled midwives (Harriet Nakanyike, personal communication, 2002). Before establishing their own private clinic, midwives typically work for many years in government service. They provide a range of primary care services including curative care, antenatal care, labor and delivery services, family planning, immunizations and drugs. Drugs provided by midwives include medicines to treat malaria, sexually transmitted infections and minor ailments such as colds, coughs and headaches. Some midwives have laboratories and/or dental services available at their clinics. They treat both male and female clients of all ages. Midwives usually employ a small staff consisting of young midwives or nurses who have recently completed their training. Occasionally, a midwife might employ an unskilled relative as her assistant (Beth Fischer, personal communication, 2002).

Later borrowers include nurses, clinical officers and doctors, although midwives remained the largest group of borrowers (As of December 2001, 49% of loans were taken by midwives, 29% by nurses, 11% by clinical officers and 11% by doctors). Because of the loan size and terms of the microfinance program, the loans were probably more attractive to providers such as midwives and nurses than to doctors. The impact of the loans on later borrowers will be assessed in a separate study.

Loan recipients were identified through professional associations such as the Uganda Private Midwives Association (UPMA) but all private providers were eligible to apply for loans. The loans were given on a revolving basis, upon repayment of the initial

amount. Providers could use loans for working capital, to purchase drugs and equipment and to renovate and expand clinics. It was anticipated that a high proportion of initial loans would be used for purchasing drugs. Once the clinic increased its revenues and became financially more sustainable and providers gained experience and confidence in borrowing, it was expected that loans would be used for clinic expansion, renovation and the purchase of equipment. Out of the 15 midwives who took loans (average loan amount of $454), 11 repaid their loans and took out second loans (average loan amount of $742). A review of loan applications showed that about 87% of midwives used the first loan for drug purchase, 47% to buy equipment and 40% for clinic renovation. The proportion of midwives who used the second loan for drug purchase (91%) increased slightly, the proportion buying equipment (55%) with the second loan increased to a greater extent and there was a substantial increase in the proportion of midwives who used the second loan for clinic renovation/upgrade (to 73%). This is consistent with the expectation that with the increase in the loan amount over time, borrowers are more likely to use the funds for making large-scale improvements in the clinic.

An important component of the loan program consisted of training geared towards imparting basic business skills to borrowers. The National Smallholder Business Center, a local business training organization, provided the business skills training. Initial assessment revealed that most of the midwives possessed limited business skills, did not keep complete financial records, and had very little information on how to access credit. The training program was designed to respond to these areas of potential improvement and focused on basic principles of running a private practice and credit management. Five days of business skills training was given to loan recipients and consisted of training in key elements of business management, including business planning, record keeping, financial reporting, credit management and marketing. Ensuring that clients were satisfied with services was discussed as a critical component of marketing. Trainees were encouraged to increase client satisfaction by improving the quality of the services they offered. The training specifically addressed issues such as client-provider interaction, the availability of drugs and supplies, hygiene and sanitation, confidentiality, affordability and accessibility. The importance of these factors in determining client perceptions of

quality, and eventually client flow, was emphasized. Trainees were also given an introduction to family planning products sold by the Commercial Market Strategies project (Meaghan Smith, personal communication 2002).

As part of the training follow-up, clinic visits were conducted to identify areas of improvement and to recommend corrective actions. During these clinic visits, midwives' performance was assessed on key items covered in the initial training. These included cleanliness, client privacy, availability of drugs and basic supplies, placement of clinic signboards as a way of making clinics more accessible, and record keeping. Based on findings from the baseline client exit survey, midwives were also given feedback on client perceptions of the quality of care they provided. The training and follow-up visits helped make midwives cognizant of factors that determine client perceptions of quality.

Perceived Quality of Services

Increasing attention has been paid in recent years to patient views of the quality of services they receive. A number of studies have shown that perceived quality of care has a strong impact on patterns of utilization of health care services (Baltussen et al., 2002) and contraceptive use (Speizer and Bollen, 2000) and that patient satisfaction is associated with continued use of medical services (Bernhart et al., 1999). Since patient perceptions of quality of care are considered an important determinant of the utilization of health services and there is an interest in increasing the utilization of services, client perceptions are increasingly treated as an outcome of health care delivery (Baltussen et al., 2002).

Researchers have regarded the conduct of health personnel, adequacy of resources and services, accuracy of diagnosis, efficacy of cure and financial and physical accessibility of services as important dimensions of the quality of care (Baltussen et al., 2002; Bernhart et al., 1999). In spite of substantial recent interest on this subject in the developing country context, however, there is no definitive agreement on the tools or indicators that should be used to operationalize these concepts. Relatively few published studies have examined the criteria used by individuals to judge the quality of services and

there is an absence of a detailed taxonomy of perceived quality that might be used to develop tools that measure client perceptions adequately (Haddad et al., 1998). Client satisfaction with the quality of services is difficult to measure because patients tend to withhold negative opinions if they feel gratitude for the provider or fear retribution. As a result, clients tend to over-report positive perceptions of the quality of services (Bernhart et al., 1999). Moreover, objective measures of quality may not be directly relevant to service utilization decisions since client perceptions of quality can be quite different from more objective measures of technical competence (Speizer and Bollen, 2000). For these reasons, there is a danger of collecting information on indicators that may not be important to clients' decisions to use services in the future.

To measure indicators of quality that are relevant to clients' decisions to use services, clients are asked about events and behaviors rather than their opinions (Bernhart et al., 1999). This approach helps identify those aspects of the services that are meaningful to clients and are most likely to influence service utilization. To determine privacy, for example, patients in one study were asked whether anyone who did not participate in providing care was present during counseling and treatment. The usual approach to measuring this indicator would have been to ask patients whether they felt that privacy was observed during their visit (Bernhart et al., 1999). We use a similar approach in this study, by asking clients about their reasons for preferring the particular clinic they visited on the day of the interview. Because clients report on measures of quality that are directly relevant to a behavior (their choice of a particular outlet), these indicators are likely to capture important predictors of service utilization.

DATA AND METHODS

Study Design

A quasi-experimental design using baseline and follow-up surveys and a nonequivalent comparison group was adopted to evaluate the impact of the loans on client perceptions of the quality of services provided at the clinics. Fifteen out of the 22 clinics in the sample received loans. The 15 intervention clinics were located in Kampala, Mukono and Mpigi districts. Five out of the 7 comparison group clinics were located in Mbarara

and two comparison clinics were located in Kampala. Interviewers were blind to the assignment of clinics. It was originally planned that all midwife clinics that first received loans in Kampala, Mukono and Mpigi districts would become the intervention clinics while all clinics in Mbarara would become the comparison clinics. However, two clinics in Kampala that had initially expressed interest in applying for loans decided against applying for loans and were later re-assigned to the comparison group. Mbarara district was chosen as the location for the comparison clinics because the socio-economic characteristics of Mbarara city were broadly similar to those of Kampala. In addition, comparison clinics were chosen based on their similarity to intervention clinics in terms of their client volume, inpatient and outpatient facilities and the range of services that they offered.

In spite of certain similarities with Mbarara, Kampala is unique in Uganda because of high levels of health service provision by private sector providers. Mukono and Mpigi are geographically proximal to Kampala and are also different from Mbarara in this respect. For example, 80% of pharmacies (which is one type of private sector outlet in Uganda) are located in Kampala. While Mbarara is a developed district, there is a strong public sector presence in Mbarara. Specifically, there is a regional referral hospital in Mbarara city that private midwives compete with. Differences between intervention and comparison areas in terms of the availability of public sector services have important implications for the study findings because of the abolishment of cost-sharing at government health centers during the study period. Private midwives in Mbarara reported that the abolishment of cost-sharing adversely affected the client flow to their clinics by making public sector facilities more attractive to clients. Private midwives in Kampala, Mukono and Mpigi did not report such an effect.

Questionnaire and Indicators

The questionnaire was designed to collect data on socio-demographic characteristics (such as age, gender, marital status and education), service utilization (preventive or curative care reasons for visiting the outlet) and client satisfaction. Prior to data collection, the questionnaire was pre-tested at several clinics in Kampala and revised

accordingly. To measure service utilization, clients were asked "For what reason did you visit this outlet today?" Respondents could spontaneously report their reasons for visiting, including for family planning, antenatal care, postnatal care, immunization, delivery, child nutrition, AIDS counseling, STI treatment, malaria treatment or other. To measure client satisfaction, respondents were asked "Could you please give me all the reasons that you came to this outlet instead of any other?" Respondents could spontaneously report on quality related reasons for their visit, including the availability of drugs, fair charges, cleanliness, good handling of clients, privacy, accessibility, good physical outlook, range of services and other reasons. The same instrument was used pre and post and at both intervention and comparison clinics.

Data Collection

Baseline exit interviews were conducted at intervention and comparison clinics between November and December 2000. Loans were given out during January and February 2001. Eleven midwives repaid their loans and took second loans after June 2001. Follow-up exit interviews were conducted at the same clinics between February and March 2002. On average there was a period of about one year between the first loan disbursement and the follow-up interviews. All clients 15 and older who exited the clinics were eligible for interviewing.

Both the baseline and follow-on surveys were conducted over a period of five days, from Tuesday to Saturday. Twenty-two interviewers conducted the interviews. Each interviewer was assigned to the same clinic throughout the study period and was present at the clinic from the time of opening until it closed or until 9.00pm.

Analyses

We conducted the analyses both at the clinic and at the individual client levels. Analysis at the clinic level is needed because the intervention was conducted at the level of the clinic/provider. Analysis at the client level adds to the clinic level analysis by permitting us to control socio-demographic differences in client characteristics. Due to the small

number of clinics in our sample (n=22), for the clinic level analysis we report p-values at 0.10 or below. For the client level analysis we report p-values at 0.05 or below.

We examined changes in perceived quality (measured by reasons for client preference of the clinic rather than another clinic). Multiple indicators were used to measure perceived quality. T-tests were used to assess changes at the clinic level. The analysis of variance was used to test for the net impact of the intervention at the clinic level. At the client level, because respondents in intervention and comparison groups may differ in their socio-demographic characteristics (O'Leary et al., 1997), multivariate logistic regression analysis was used to determine the net effect of the intervention.

To estimate net effects, at both clinic and client levels, two separate models were run for each indicator of quality. The first model tested whether the change over time in a particular indicator was significant. In Model 1, we examined the odds ratio on a dummy for the follow-up period in each data set. Model 1 was first run with data from intervention clinics (using a merged data set that included baseline and follow-up data from the intervention clinics only) and then with data from comparison clinics (using a merged data set that included baseline and follow-up data from the comparison clinics only).

A second model tested whether trends in intervention and comparison clinics were significantly different from each other (using a merged data set that contained baseline and follow-up data from both intervention and comparison clinics). Model 2 included variables used in the first model plus an interaction term that indicated whether trends in the intervention and comparison clinics were significantly different from each other: we examined the odds ratio on the interaction of a dummy for a follow-up period and a dummy for the intervention site. This allowed us to assess whether the impact of the intervention was positive, negative or whether the intervention had no net impact.

We adjusted the client level analysis for the "clustering effect". This arises from clients visiting a clinic having similar characteristics to each other and statistical tests

underestimating the standard errors of parameter estimates. Therefore, we computed the analysis using the Huber-White correction, a robust estimator of variance. This estimator relaxes the assumption of independence of observations and requires only that observations be independent across clusters (Huber, 1967; White, 1980).

RESULTS

First, we examined findings at the clinic level. Table 1 shows the proportion of clients who gave various service-related reasons for choosing the clinic they visited rather than another clinic. There were increases in the proportion of clients who visited an intervention clinic due to the greater availability of drugs at that clinic (0.23 to 0.36) or fair charges (0.21 to 0.30), or greater privacy (0.03 to 0.10), or greater accessibility (0.44 to 0.53) or good physical outlook of the clinic (0.03 to 0.08) but these increases did not reach statistical significance. There were declines in the proportion that chose a comparison clinic due to the greater availability of drugs at that clinic (0.46 to 0.32), or fair charges (0.34 to 0.22), or cleanliness (0.25 to 0.05), or good handling of clients (0.65 to 0.43), or privacy (0.15 to 0.03) or accessibility (0.57 to 0.43). In two instances, the declines at comparison clinics reached statistical significance: perceived cleanliness and good handling of clients (p<0.10) declined at comparison clinics.

The trends at intervention and comparison clinics were significantly different from each other (p<0.10) for two indicators: fair charges and privacy. At the clinic level, the intervention had a net positive effect on these two indicators of client satisfaction.

Neither the increase in the proportion of clients who always visited the intervention clinics (0.40 to 0.46) nor the decline in this proportion at the comparison clinic (0.32 to 0.20) reached statistical significance. At the clinic level, there was also no net effect of the intervention on this indicator.

Table 1 about here

13

Next, we examined socio-demographic differences between clients at intervention and control clinics. Uncontrolled differences in socio-demographic characteristics of clients at intervention and comparison clinics may lead to misleading findings at the clinic level. Table 2 shows the socio-demographic characteristics of clients at intervention and comparison clinics. The mean age of clients was 27 years in intervention clinics and 28 years in the control clinics.

Clients at the intervention clinics appear more likely to be females than clients at the comparison clinics (73% vs 56%). This may be explained by the fact that drugs can be purchased at midwife clinics or pharmacies. Because pharmacies are far more prevalent in Kampala than in other parts of the country (Jacobs et al., 1999), a smaller proportion of men in Kampala would visit midwife clinics to purchase drugs.

Consistent with the larger female clientele, clients at intervention clinics appear less likely to be married than clients at the comparison clinics (28% vs 36%). Education levels of clients at intervention and comparison clients seem similar. Usual sources of treatment appear to be similar. Nearly 80% of clients reported that they usually used private hospitals/clinics. These findings suggest that socio-demographic factors should be adjusted for at the multivariate level.

Table 2 about here

Table 3 shows adjusted odds ratios indicating changes between baseline and follow-up surveys in clients' reasons for coming to this clinic rather than another clinic, and the net effect of the intervention. An odds ratio that is greater than 1 shows an increase in that indicator between baseline and follow-up surveys. An odds ratio less than 1 shows a decrease in that indicator between baseline and follow-up surveys. Column 1 in Table 3 shows the odds ratio on dummy variables for the follow-up period indicating reasons for visiting the intervention clinics for various service related reasons. Column 2 in Table 3 shows these results for comparison clinics. Column 3 in Table 3 shows p-values on the

interaction of dummy variables for the follow-up period indicating various reasons for visiting clinics with a dummy variable for intervention clinics.

Although the odds ratio did not reach statistical significance, clients at intervention clinics tended to be more likely to report at follow-up that the availability of drugs was a reason for their preference of intervention clinics. By contrast, clients at comparison clinics tended to become less likely to report at follow-up that drug availability was a reason for their preference of comparison clinics. The net effect of the intervention on this indicator was statistically significant.

Although odds ratios were again not statistically significant, clients at intervention clinics became more likely to report at follow-up that fair charges were a reason for their preference of intervention clinics, while clients at comparison clinics became less likely to report at follow-up that fair charges were a reason for their preference of comparison clinics. The net effect of the intervention on this indicator was statistically significant and positive.

There was no significant trend in cleanliness being reported at follow-up as a reason for visiting the intervention clinics, but clients became significantly less likely to report at follow-up that cleanliness was a reason for their visiting comparison clinics. This resulted in a net positive intervention effect.

Intervention clients became significantly more likely to report at follow-up that privacy was a reason for their preference of the intervention clinics. Although the trend for comparison clients was not statistically significant, clients tended to become less likely to report privacy as a reason for their visit. The net effect of the intervention on this indicator was positive and significant.

There was no net effect of the intervention on good handling of clients, clinic accessibility, good physical outlook of the clinic or on the range of services provided.

Finally, we also looked at trends in client reports of always visiting the clinic. Although the odds ratios were not significant, clients at intervention clinics tended to become more likely to always visit intervention clinics while clients at comparison clinics became less likely to always visit comparison clinics. This resulted in a net positive effect of the intervention on this indicator.

Table 3 about here

Table 4 shows adjusted odds ratios indicating factors associated with client reports of always visiting the clinic. After adjusting for other variables in the model, clients at intervention clinics were 1.8 times as likely as clients at comparison clinics to report that they always visited the clinic. Clients with secondary or higher education were 0.8 times as likely to report that they always visited the clinic.

Several quality-related reasons given by clients for visiting the clinic were associated with their reports of always visiting the clinic. Clients who reported that fair charges were a reason they preferred the clinic over another clinic were 1.8 times as likely to report that they always visited this clinic. Clients who reported good handling of clients by providers were the reasons for their preference of the clinic were about 1.8 times as likely to report that they always visited the clinic. Clients who reported privacy as a reason for coming to the clinic were 1.5 times as likely to report that they always visited the clinic. Other indicators of client satisfaction, including the availability of drugs, cleanliness, accessibility, good physical outlook of clinics or the range of services offered were not significantly associated with client reports of always visiting the clinic.

Table 4 about here

DISCUSSION

To our knowledge, this is the first study to systematically evaluate the impact of a microfinance program targeting small-scale private sector providers on the perceived

16

quality of care received by clients and on client loyalty to clinics. At the clinic level, possibly due to the small number of clinics in the sample, the intervention had weak effects. At the client level, the intervention appears to have had a net positive impact on four out of the eight indicators of perceived quality that clients reported on: the perceived availability of drugs, fair charges, cleanliness and privacy. These changes are consistent with anecdotal observations and informal discussions with midwives during clinic visits. For example, midwives reported that the consistent supply of drugs was a factor that was important in determining the clinic's reputation, client flow and profits. This had been the reason for their use of a substantial portion of the first loan to purchase drugs. One midwife reported that she had lowered the charges on drugs because the loan enabled her to obtain drugs at wholesale prices. Several midwives increased the number of rooms that were part of their practice by either making an existing room usable or by renting additional space. This may have resulted in greater privacy for clients.

Overall, there was considerable eagerness for midwives to participate in this intervention. The majority of midwives took out repeat loans. Coupled with the fact that loans were given out at the prevailing commercial interest rate, this suggests that midwives perceived the program to be adding value to their practices. Midwives were extremely receptive to business training. They started maintaining cash registers and became organized at keeping their financial records.

Secular trends and differences between the intervention areas (Kampala, Mpigi and Mkuno) and the comparison area (Mbarara) played an important role in producing these effects. Indicators at comparison clinics suggested negative trends. The declines in these indicators may have occurred due to the abolishment of user fees at government clinics: the removal of cost-sharing made government services more attractive than private clinics in Mbarara. Although the removal of user fees occurred nationally, it had a substantially greater impact on the performance of private sector clinics in Mbarara district (where most comparison clinics were located) than in Kampala because of a basic difference in the provision of health services between these two locations. The public sector makes a significant contribution to the delivery of health care in Mbarara, both through a regional referral hospital in Mbarara city and because of a substantial number

17

of other public sector facilities. In contrast, the public sector's role in Kampala is relatively limited (Jacobs et al., 1999).   Midwives in Mbarara reported that the removal of user fees resulted in drawing clients away from their clinics. With the availability of free drugs from the public sector, the purchase of drugs may have become a less important reason for visiting a midwife clinic in Mbarara. Moreover, clients may have perceived the charges at private clinics in Mbarara less fair after free services became available at government clinics in Mbarara. With government clinics becoming more attractive, the proximity of private clinics may have become a less important reason for visiting them. As a result of the tendency of indicators to improve at intervention clinics and decline at comparison clinics, the intervention had a net positive impact on several indicators of perceived quality.

Consistent with a net positive impact of the intervention on clients' perceptions of the quality of care, there was a net positive effect of the intervention on client reports of always visiting the intervention clinics. This suggests that there may be a link between client perceptions of improvements in quality and client loyalty.

From a methodological viewpoint, by tying client perceptions of quality to the actual behavior of coming to a clinic (we asked clients about their reasons for coming to the clinic they were interviewed at rather than another clinic), we expected to get indicators that were meaningful to patient satisfaction. An examination of the association between indicators of perceived quality and client loyalty to a clinic (measured by client reports of always visiting the clinic) shows that client reports of several quality related reasons for visiting the clinics were significantly associated with their loyalty to the clinic. This increased our confidence in the validity of the findings.

This study was not designed to assess whether objective improvements in quality resulted from the intervention. Anecdotally, some midwives used part of the loan proceeds to improve infection control at their clinics, especially for MCH related services. For example, one midwife used her first loan to purchase several sets of plastic tubs and containers to better implement infection control at her clinic. These tubs are used to

disinfect instruments in her midwifery kit (forceps, scissors, etc.) The same midwife used a larger second loan to renovate an unused room in her clinic and furnish it with the equipment needed to provide post abortion care services. The second loan enabled her to purchase the kits needed to carry out manual vacuum aspiration for girls who present with partial abortions. Another midwife used part of her loan proceeds to purchase an autoclave enabling her to improve her ability to sterilize instruments. A third example is provided by a midwife who purchased vinyl covering for her delivery couch and replaced the torn and infection prone material that had previously covered it (Beth Fischer, personal communication, 2002). An objective assessment of the quality of care provided by private providers (such as prescribing practices or infection control) and the subsequent training of providers in areas that are weak could enhance the impact of such an intervention.

Finally, the impact of the intervention was assessed over a relatively short period of time (about 13 months). It is likely that the full impact of the intervention, especially the impact of repeat loans, will be registered over a longer time period. Although client loyalty to clinics appears to have increased as a result of the intervention, it would be useful to measure how greater client loyalty translates into an increase in the number of clients who visit clinics.

Overall, these findings suggest that a microfinance program that provides business skills and loans to small-scale private providers such as midwives is likely to raise client perceptions of the quality of services provided and may increase client loyalty to providers. Given the excellent loan repayment rate and the enthusiasm of the borrowers in participating in the microfinance programs, it seems that microfinance may serve to increase client satisfaction and improve provider business management skills. In doing so, microfinance may prove to be an important tool for strengthening the private sector delivery of health services.

References

Adams DW and Fitchett DA. Informal Finance in Low-Income Countries. Boulder: Westview; 1992.

Baltussen RMPM, Ye Y, Hadad S, Sauerborn RS. Perceived quality of care of primary health care services in Burkina Faso. *Health Policy and Planning* 2002: 17(1): 42-48.

Bernhart M, Wiadnyana IGP, Wihardjo H, Pohan I. Patient satisfaction in developing countries. *Social Science and Medicine* 1999: 48: 989-996.

Brugha R, Zwi A. Improving the quality of privately provided public health care in low and middle income countries: challenges and strategies. *Health Policy and Planning* 1998: 13(2): 107-20.

Foreit KGF. Broadening commercial sector participation in reproductive health. The role of the public sector prices on markets for oral contraceptives. Commercial Market Strategies Technical Paper No. 3. Washington D.C.: Commercial Market Strategies project; 2002.

Haddad S, Fournier P, Machouf Nima, Yatara F. What does quality mean to lay people? Community perceptions of primary health care services in Guinea. *Social Science and Medicine* 1998: 47(3): 381-394.

Huber PJ. The behavior of maximum likelihood estimates under non-standard conditions. In *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability* (Vol. 1, pp. 221-233) Berkeley: University of California Press; 1967.

Hulme, D. and P. Mosley. Finance against poverty, vol 1: Analysis and recommendations. London: Routledge (draft); 1996.

Jacobs B, Whitworth J, Lwanga A, Pool R. Feasibility and acceptability of social marketing of pre-packaged treatment for men with urethral discharge (Clear7): results from a controlled train in Uganda. Entebbe: Medical Research Council Research Programme on AIDS, Uganda Virus Research Institute; 1999.

Mills A, Brugha R, Hanson K, McPake B. What can be done about the private health sector in low-income countries? *Bulletin of the World Health Organization* 2002: 80: 325-330.

MkNelly B, Watetip C, 1993. Impact evaluation of freedom from hunger's credit with education program in Thailand. Davis, CA: Freedom From Hunger Foundation; 1993.

Montgomery R, Bhattacharya D, Hulme D. Credit for the poor in Bangladesh the BRAC Rural Development Program and the Government Thana Resource Development and Employment Programme." In Finance Against Poverty, Volume II: Country Case

Studies, edited by David Hulme and Paul Mosley, 123-227. London: Routledge (draft); 1996.

O'Leary A, DiClemente RJ and Aral SO. Reflections on the design and reporting of STD/HIV behavioral intervention research. *AIDS Education and Prevention*, 1997, 9(Suppl. A): 1-14.

Schuler RS, Hashemi SM, Riley AP, Akhter S. Credit programs, patriarchy and men's violence against women in rural Bangladesh. *Social Science and Medicine* 1996: 43(12): 1729-1742.

SEATS. Uganda final country report. Arlington, VA: John Snow International; 2000.

Sebstad J., Chen G. Overview of studies on the impact of microenterprise credit. Assessing the Impact of Microenterprise Services (AIMS). Washington D.C.: Management Systems International; 1996.

Sine J. How much is enough? Estimating requirements for subsidized contraceptives: results from a ten-country analysis. Commercial Market Strategies Technical Paper No. 4. Washington D.C.: Commercial Market Strategies project; 2002.

Speizer IS, Bollen KA. How well do perceptions of family planning service quality correspond to objective measures? Evidence from Tanzania. *Studies in Family Planning* 2000: 31(2): 163-177.

Summa Foundation. Case study: Indonesia midwives loan fund. Can a revolving loan fund be used to encourage private midwifery practices? Washington D.C.: Commercial Market Strategies project; n.d.

The World Bank. The World Bank and Microenterprise Finance: from concept to practice. Report No. 19895. Operations Evaluation Department. Washington D.C.: World Bank; 1999.

White H. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*: 48: 817-830.

Table 1. Clinic level results: proportion of clients who gave service-related reasons for choosing the clinic, proportion who always visit the clinic, and net effects of the intervention

	Intervention			Comparison			Net Effect of the Intervention
	Baseline (n=15)	Follow-up (n=15)	Diff. Sig.	Baseline (n=7)	Follow-up (n=7)	Diff. Sig.	
Reasons for visit today							
Availability of drugs	0.23	0.36	-	0.46	0.32	-	-
Fair charges	0.21	0.30	-	0.34	0.22	-	a
Cleanliness	0.20	0.18	-	0.25	0.05	*	-
Good handling of clients	0.57	0.58	-	0.65	0.43	a	-
Privacy	0.03	0.10	-	0.15	0.03	-	a
Accessibility	0.44	0.53	-	0.57	0.43	-	-
Good physical outlook	0.03	0.08	-	0.01	0.01	-	-
Range of services	0.11	0.20	-	0.16	0.15	-	-
Always visit the clinic	0.40	0.46	-	0.32	0.20	-	-

[a]p<0.10   [*]p<0.05   [**]p<0.01

Table 2. Client level results: socio-demographic characteristics of clients at baseline

	Intervention (n=779)	Comparison (n=439)
Mean age	27.0	27.8
Gender		
Male	27.0	44.0
Females	73.0	56.0
Marital status		
Never married	27.6	36.2
Married	65.6	59.5
Other	6.8	4.3
Education		
None, some primary	29.1	26.4
Completed primary	18.0	20.3
Some secondary	24.6	29.8
Completed secondary or higher	28.2	23.5
Usual sources of treatment		
Public hospital/clinic	15.1	14.6
Private hospital/clinic	79.5	77.7
Pharmacy	2.1	1.4
Drug shop	2.2	4.8

Table 3. Client level results: adjusted odds ratios[1] showing changes in service-related reasons for choosing the clinic, for always visiting the clinic and net effects of the intervention

Dependent Variable	Intervention (n=1690)	Comparison (n=739)	Net Effect of the Intervention
Reasons for visit today			
Availability of drugs	1.90	0.53	Positive**
Fair charges	1.71	0.52	Positive*
Cleanliness	0.87	0.13***	Positive**
Good handling of clients	0.96	0.36	No effect
Privacy	2.19*	0.37	Positive**
Accessibility	1.33	0.50	No effect
Good physical outlook	2.45	0.91	No effect
Range of services	1.51	4.44*	No effect
Always visit this outlet	1.31	0.53	Positive*

*p<0.05 **p<0.01 ***p<0.001   [1]Adjusted for age, gender, marital status, education of respondents

Table 4. Client level results: adjusted odds ratios[1] indicating factors associated with always visiting the clinic (full sample, n=2429)

Location (ref: comparison group) Intervention	1.82*
Age	1.01
Gender (ref: male) Females	1.10
Marital status (ref: never married) Married Other	1.20 0.97
Education (ref: not completed secondary) Secondary completed or higher	0.76*
Availability of drugs was reason for coming to outlet No Yes	1.00 1.27
Fair charges was reason for coming to outlet No Yes	1.00 1.80***
Cleanliness was reason for coming to outlet No Yes	1.00 1.33
Good handling of clients was reason for coming to outlet No Yes	1.00 1.84**
Privacy was reason for coming to outlet No Yes	1.00 1.54**
Accessibility was reason for coming to outlet No Yes	1.00 1.15
Good physical outlook was reason for coming to outlet No Yes	1.00 0.61
Range of services was reason for coming to outlet No Yes	1.00 0.78

*p<0.05 **p<0.01 ***p<0.001 [1]Adjusted for age, gender, marital status, education of respondents